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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,241	09/18/2003	Kevin M. Christiansen	18602-08301	2909

61520 7590 09/18/2007

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EXAMINER	
SORRELL, ERON J	
ART UNIT	**PAPER NUMBER**
2182	

MAIL DATE	DELIVERY MODE
09/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/667,241	CHRISTIANSEN, KEVIN M.	
	Examiner	Art Unit	
	Eron J. Sorrell	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-20* is/are allowed.

6)☒ Claim(s) *21-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *20070822*.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 21-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai et al. (U.S. Patent No. 5,584,010 hereinafter "Kawai") in view of Matsumoto et al. (U.S Patent No. 5,614,685 hereinafter "Matsumoto").

4. Referring to apparatus claims 21,26, and 30, and method claim 34, Kawai teaches a memory access controller (see item 103 in figure 6) adapted to be coupled to a computer system memory

(see item 100 in figure 6) and an input/output device (I/O) device (see DSP-2 or DSP-3), comprising:

a register (see item 251 in figure 7) for storing a data status signal generated by the I/O device after the I/O device transfers a data unit to a memory (see lines 12-25 of column 9); and

circuitry coupled to the register (see item 260 in figure 7) for receiving the data status signal and for controlling subsequent operation of the memory access controller based on the status signal (see lines 27-51 of column 10).

Kawai fails to teach the data unit is transferred to an external system.

Matsumoto teaches, a system wherein a DSP transfers a data unit to an external system (see lines 60-67 of column 3 and item 12 in figure 1).

All of the claim elements are known in Kawai and Matsumoto. The only difference is the combination of "old elements" into a single device by providing the DSPs taught by Kawai with the data I/O control portion that transfers data from the DSP to an external device taught by Matsumoto by adding the data I/O control portion to the system of Kawai.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to add the

data I/O control portion to the system of Kawai since the data I/O control portion would not affect the operations of the other components of Kawai and the I/O control portion would achieve the predictable results of providing data to an external system for additional processing.

The rejection above is based on the following reasoning: DSP-1 wants to send data to DSP-2 (I/O device), however DSP-2 is busy sending data to the memory, therefore DSP-2 is busy (see figure 10B), once DSP-2 is finished sending data to the external memory, it sends a status signal to the DMA controller of DSP-1 informing DSP-1 that it is now ready to receive data (see lines 15-26 of column 11).

5. Referring to claims 22 and 27, and method claim 33, Kawai teaches the data status signal indicates the end of a data unit (see lines 31-35 of column 9, note the status is updated to reflect the state of the local bus, if there is a transition from a busy state to a ready state, then there was an end to the previously transferred data unit).

6. Referring to claims 23 and 28, Kawai teaches the memory controller executes an instruction in response to the data status signal (see lines 11-15 of column 9).

7. Referring to claims 24 and 29, Kawai teaches the data status signal is used to prompt the memory access controller to request information from the I/O device (see figure 10B, note if the destination, DSP-2 (I/O device) is busy, its continually checked until is becomes ready).

8. Referring to claim 25, Kawai teaches the data status signal is used to keep the channel process active (see lines 11-15 of column 9, note the channel is kept active with the subsequent data transmission).

9. Referring to claim 31, Kawai teaches the I/O device generates the status data after a data unit transfer from the computer system memory (see lines 15-26 of column 11). Matsumoto teaches transferring to the system external to the computer system (see lines 60-67 of column 3). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the same reasons as mentioned in the rejection of claim 30 above.

Referring to claim 32, Kawai teaches the circuit is capable of using the status data to control any subsequent data unit transfers between the computer system memory (see lines 15-26 of column 11). Matsumoto teaches transferring to the system external to the computer system (see lines 60-67 of column 3). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for the same reasons as mentioned in the rejection of claim 30 above.

10. Referring to claim 33, Kawai the memory capable of storing status data is a register (see item 251 in figure 7) and the computer system is a computer (note the computer comprises collectively items 200a-c. the busses and the busses connecting them; this configuration yields, inter alia a system with memory, a data processing unit, a dma controller, an i/o interface, all components of a typical computer).

11. Referring to claim 36, Kawai teaches determining whether the status data in the status memory indicate completion of the data unit transfer (see figure 10B, note if the destination, DSP-2 (I/O device) is busy, its continually checked until is becomes ready); and transferring another data unit between the

memory in the computer system and the system external to the computer system after determining that the data in the status memory indicate completion of the data transfer (see lines 15-26 of column 11).

Response to Arguments

12. Applicant's arguments with respect to claims 21-36 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

13. Claims 1-20 are allowed. The reasons for allowance set forth in the office action mailed 5/23/06 are maintained.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened

statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eron J. Sorrell whose telephone number is 571 272-4160. The examiner can normally be reached on Monday-Friday 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

KIM HUYNH
SUPERVISORY PATENT EXAMINER

9/14/07

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EJS
September 11, 2007